IN THE CLAIMS:

Please cancel Claims 16-21 without prejudice.

Please amend Claims 1-10 and 12. A marked-up version showing the changes made hereto is attached.

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1. (Amended) A process for forming a silicon-based thin film by high-frequency plasma chemical vapor deposition, wherein silicon fluoride and hydrogen are contained in a material gas and oxygen atoms are incorporated in the material gas in a concentration of from 0.1 ppm to 0.5 ppm based on a concentration of silicon atoms.

2. (Amended) The process according to Claim 1, wherein the hydrogen in the material gas is fed at a flow rate not lower than a flow rate of the silicon fluoride.

3. (Amended) The process according to Claim 1, wherein the silicon-based thin film is formed at a pressure of 50 mTorr or higher.

4. (Amended) A silicon-based thin film formed by high-frequency plasma chemical vapor deposition, the silicon-based thin film having been formed under conditions that silicon fluoride and hydrogen are contained in a material gas and oxygen atoms are incorporated in the material gas in a concentration of from 0.1 ppm to 0.5 ppm based on a concentration of silicon atoms.

5. (Amended) The silicon-based thin film according to Claim 4, which contains the oxygen atoms in an amount of from 1.5×10^{18} atoms/cm^3 to 5.0×10^{19} atoms/cm^3.

6. (Amended) The silicon-based thin film according to Claim 4, wherein the hydrogen in the material gas has been fed at a flow rate not lower than a flow rate of the silicon fluoride.

Sub B1 ~~B2~~ Cont'd

7. (Amended) The silicon-based thin film according to Claim 4, wherein the silicon-based thin film has been formed at a pressure of 50 mTorr or higher.

8. (Amended) The silicon-based thin film according to Claim 4, wherein the silicon-type thin film has a Raman scattering intensity due to crystalline component which intensity is at least three times the Raman scattering intensity due to amorphous component.

9. (Amended) The silicon-based thin film according to Claim 4, wherein the silicon-based thin film has a diffraction intensity of the (220)-plane as measured by X-ray or electron-ray diffraction, which is in a proportion of 50% or more with respect to the total diffraction intensity.

10. (Amended) A photovoltaic device comprising a substrate and formed thereon a semiconductor layer having at least one set of p-i-n junction, wherein at

least one i-type semiconductor layer has been formed by a process for forming a silicon-based thin film by high-frequency plasma chemical vapor deposition, the i-type semiconductor layer having been formed under conditions that silicon fluoride and hydrogen are contained in a material gas and oxygen atoms are incorporated in the material gas in a concentration of from 0.1 ppm to 0.5 ppm based on a concentration of silicon atoms.

11. (Not Currently Amended) The photovoltaic device according to Claim 10, wherein the i-type semiconductor layer contains the oxygen atoms in an amount of from 1.5×10^{18} atoms/cm^3 to 5.0×10^{19} atoms/cm^3.

12. (Amended) The photovoltaic device according to Claim 10, wherein the hydrogen in the material gas has been fed at a flow rate not lower than a flow rate of the silicon fluoride.

13. (Not Currently Amended) The photovoltaic device according to Claim 10, wherein the i-type semiconductor layer has been formed at a pressure of 50 mTorr or higher.

14. (Not Currently Amended) The photovoltaic device according to Claim 10, wherein the i-type semiconductor layer has a Raman scattering intensity due to crystalline component which intensity is at least three times the Raman scattering intensity due to amorphous component.